Maternal Cdx2 is dispensable for mouse development.

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Public Summary:

Scientific Abstract:
In many invertebrate and vertebrate species, cell fates are assigned through the cellular inheritance of differentially localized maternal determinants. Whether mammalian embryogenesis is also regulated by deterministic mechanisms is highly controversial. The caudal domain transcription factor CDX2 has been reported to act as a maternal determinant regulating cell fate decisions in mouse development. However, this finding is contentious because of reports that maternal Cdx2 is not essential for development. Notably, all of the previously published studies of maternal Cdx2 relied on injected RNA interference constructs, which could introduce experimental variation. Only deletion of the maternal gene can unambiguously resolve its requirement in mouse development. Here, we genetically ablated maternal Cdx2 using a Cre/lox strategy, and we definitively establish that maternal Cdx2 is not essential for mouse development.